PATENT
1511-1036

IN THE U.S. PATENT AND TRADEMARK OFFICE

In re application of

Katrin GISSELFALT — Conf. 6764

Application No. 10/518,428 — Group 1796

Filed December 20, 2004 — Examiner B. Gillespie

LINEAR BLOCK POLYMER

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Assistant Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

June 30, 2008

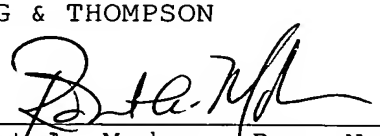
Applicants request a pre-appeal brief review of the final rejection in the above-identified application. No amendments are being filed with this request.

A Notice of Appeal is filed herewith.

The review is requested for the reasons advanced on the attached sheets.

Respectfully submitted,

YOUNG & THOMPSON



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REASONS IN SUPPORT OF REQUEST FOR REVIEW

A pre-appeal brief review is respectfully requested because the rejections include at least a clear factual error, or in the alternative, a clear legal error, as explained below.

Claims 1-20 are not anticipated by FLODIN US 6,210,441 ("FLODIN").

FLODIN fails to disclose the following four features of the linear polymer formula I in independent claim 1:

I. R2 is derived from an aromatic diisocyanate.

The aromatic diisocyanate of the claimed invention is selected to reach desired mechanical properties. FLODIN discloses aliphatic and aromatic diisocyanate, but FLODIN fails to disclose a preference for aromatic diisocyanate.

II. $0 < y < 4$.

The y-value of the claimed polymer is used to describe the length of the "hard block". FLODIN fails to disclose the length of the hard blocks, except that they should be possible to excrete from a human body. See, column 7, lines 54.

Indeed, while FLODIN discloses linear block polymers, pre-polymer reactants and process conditions, FLODIN gives no

closer description of the polymer backbone architecture. At best, FLODIN simply describes ideal situations and average values.

III. A polymer formed by "a method consisting essentially of adding said esterdiol at a slow rate to said aromatic diisocyanate at a temperature of 50°C-60°C".

A catalyst would materially affect the basic and novel characteristics of the claimed invention, e.g., by inducing faster rate of reaction. Thus, the "consisting essentially of" language excludes a catalyst from the claimed method.

FLODIN, however, requires a catalyst in the claimed temperature range of 50°C-60°C. See, e.g., column 4, lines 41-43. Moreover, as discussed above in I, FLODIN does not express a preference for an aromatic diisocyanate, and in the Examples, where an aromatic diisocyanate is utilized, FLODIN requires a temperature of anywhere from 70°C to 90°C.

Thus, the method of FLODIN cannot inherently teach the claimed polymer.

IV. The ratio of esterdiol to aromatic diisocyanate is larger than 2:1.

FLODIN discloses a ratio of 2 is selected for the shortest prepolymers, and for longer prepolymers a ratio of less than 2 is selected. See, column 4, lines 22-45. While the Examples may appear to suggest a greater ratio, this ratio is actually contrary the teachings of FLODIN as a whole.

Thus, FLODIN cannot disclose a mole ratio of 2:1.

Therefore, FLODIN cannot anticipate independent claim 1, and dependent claims 2-20.

Claims 1-20 are not rendered obvious by FLODIN US 6,210,441 ("FLODIN").

FLODIN also fails to suggest the claimed polymer, or a process for obtaining the claimed polymer.

At best, FLODIN discloses a molar ratio of diisocyanate to diol of 2 for the shortest prepolymers, and a molar ratio of less than 2 for longer prepolymers, with process temperatures of 70-90°C without a catalyst, or less than 60°C with a catalyst.

As discussed above with respect to the anticipation rejection, FLODIN gives no description of the polymer backbone architecture. Only ideal situations and average values are disclosed, and no information is given about the length of the hard blocks, except that they should be excretable from the human body.

The only reactio product depicted by FLODIN is one obtained from diisocyanate and diol mixed in ratio of 2:1, e.g., at column 4, lines 33-40, but this is only part of the resulting product mixture. FLODIN solely illustrates an ideal situation. The depicted reaction product is the shortest possible prepolymer, one diol reacted with one diisocyanate at each end, but FLODIN fails to disclose the actual reaction parameters,

e.g., as discussed above in III, required to obtain this reaction product.

Indeed, to actually obtain the depicted reaction product there can only be two molecules, i.e., not two moles, of diisocyanate and one molecule, i.e., not one mole, of diol (or perform the reaction in a very dilute solution).

If one were to increase the amount of molecules without the use of protective groups one obtains a polymerization reaction as both reactants are difunctional. As a result, there is a distribution of chain lengths.

FLODIN, however, fails to disclose how to affect this distribution of chain lengths except by changing the ratio NCO/OH ratio. This is, of course, a powerful tool, but this approach does have its drawbacks, as discussed in greater detail in the Supplemental Response of February 12, 2008.

Decreasing the NCO/OH-ratio, as suggested by FLODIN, leads to a product contrary to the claimed invention, e.g., longer prepolymer molecules. Increasing the NCO/OH ratio, however, increases the amount of unreacted diisocyanate left over when all of the diol has reacted. Due to this increased amount of unreacted diisocyanate in the prepolymer mixture, one would obtain an increase in the length of the hard blocks in the finished polymer, i.e., higher y-values. As a result, this may not be a size excretable from a human body.

Indeed, the claimed process features, e.g., the combination of a lower reaction temperature (and thus lower

reaction rate, no catalyst) and the addition rate of the diol result in a prepolymer distribution much closer to the "shortest possible prepolymer" than Florin. The chain extension of such a prepolymer according to the claimed invention results in a polymer with both very short soft blocks and very short hard blocks ($0 < y < 4$) giving a stiffer material, with lower strain at break.

Thus, FLODIN cannot suggest either the claimed polymer itself or process features that would produce the claimed polymer.

Therefore, FLODIN cannot render obvious claims 1-20.

Conclusion

As shown above, the rejections of record include clear factual and/or legal errors and should be withdrawn and this application allowed, and such is respectfully requested.